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09/966,484

09/28/2001

Bruce M. Radl

13076-002001

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11/05/2003

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EXAMINER

ROSENDALE, MATTHEW L

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 11/05/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,484

Applicant(s)

RADL, BRUCE M.

Examiner

Matthew L Rosendale

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 is/are allowed.
- 6) ☒ Claim(s) 1-6,8,9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 9/18/03 regarding claims 1 – 6, 8, and 9 have been fully considered but they are not persuasive. The applicant argues on page 8 of the amendment that Langworthy does not disclose a spectrally dispersive element but instead only shows a series of dichroic mirrors. However, it is noted that independent claims 1 and 8 are not written in a means plus function language. Therefore the cited reference only has to disclose a “spectrally dispersive element” by general definition, and not in regards to the details of the applicant’s specification.

According to Webster’s Dictionary, the term “disperse” is defined as, “to cause to break up” and the term “spectrum” is defined as, “a continuum of color formed when a beam of white light is dispersed so that its component wavelengths are arranged in order”. As shown in figure 13 of Langworthy, a series of dichroic mirrors 72, 74, 76, and 78 are provided to receive a beam of white light from the taking lens 10 and disperse the component wavelengths of the light in order of Red, Green, and Blue.

Therefore by definition in the context of the claim, Langworthy discloses a “spectrally dispersive element” according to Webster’s, between a lens apparatus and a CCD image sensor.

Response to Amendment

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1 – 6, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Langworthy.

Referring to claim 1, Langworthy discloses an electro-optical apparatus in figure 13 comprising a lens 10, a CCD image sensor 20 having a pattern of color sensitive pixels, and a spectrally dispersive element comprising dichroic mirrors 72, 74, 76, and 78 between the lens 10 and CCD 20 (Col. 6, Lines 6 – 34).

2. Referring to claim 2, Langworthy discloses a Bayer filter pattern as shown in figure 14.

3. Referring to claim 3, Langworthy discloses an alternative embodiment where the color filter pattern is a tri-stripe shown in figures 7 and 8.

4. Referring to claim 4, Langworthy discloses color-sensitive pixels arranged in continuous groups having a red pixel and a blue pixel as shown in figure 14. The spectrally dispersive element 72, 74, 76, and 78, and the lens 10 shown in figure 13 are configured to focus a line image of an optical point by optically shifting object light upon a line of a group with the red end of the line within the red pixel and the blue end of the line within the blue pixel (Col. 6, Lines 6 – 34).

5. Referring to claim 5, Langworthy discloses a Bayer pattern shown in figure 14 having continuous 2x2 pixel groups having a red pixel adjacent to a first and second green pixels adjacent to a blue pixel.
6. Referring to claim 6, Langworthy discloses a spectrally dispersive element comprising dichroic mirrors arranged so that red and blue images are optically shifted to coincide geometrically at a point on the CCD image sensor (Col. 6, Lines 6 – 34).
7. Referring to claim 8, Langworthy discloses a method of optical processing by focusing an image upon a CCD with a spectrally dispersive element between the lens 10 and array 20 shown in figure 13 (Col. 6, Lines 6 – 34).
8. Referring to claim 9, Langworthy discloses a method of optically shifting red and blue images to coincide geometrically at on the sensor array as shown in figure 13 (Col. 6, Lines 6 – 34).

Allowable Subject Matter

Claim 7 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Referring to claim 7, the prior art fails to teach or suggest a spectrally dispersive element arranged to focus light in the center of a group of pixels having a red pixel, blue pixel, and first

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and second green pixels thereby creating a new green pixel by averaging the first and second green pixels to establish red, green, and blue color information center on the pint located substantially where the red, blue, and first and second green pixels meet.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew L Rosendale whose telephone number is (703) 305-4909. The examiner can normally be reached on Monday - Friday 8: 00am-4: 00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is (703) 306-0377.

MLR


WENDY R. GARBER
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